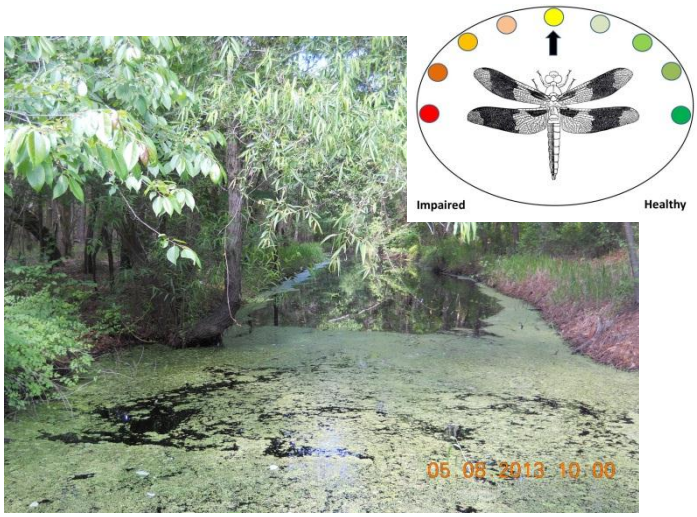
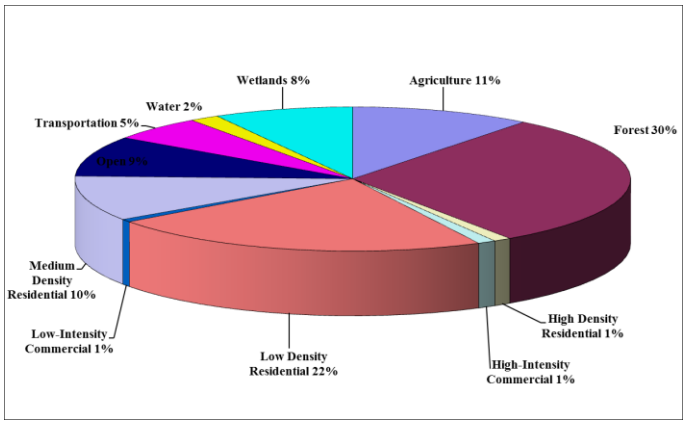
Waterbody: Unnamed Stream at Chaires Crossroad



Basin: Lake Lafayette

The Unnamed Stream at Chaires Crossroad is a highly altered stream/ditch draining Alford Arm and Lower Lake Lafayette and is located in eastern Leon County.

As shown in the following pie chart, approximately 51% of land use in the 32,021 acre watershed is agricultural, residential, commercial, or transportation. Increases in stormwater runoff, and waterbody nutrient loads can often be attributed to these types of land uses.



Background

Healthy, well-balanced stream communities may be maintained with some level of human activity, but excessive human disturbance may result in waterbody degradation. Human stressors may include increased inputs of nutrients, sediments, and/or other contaminants from watershed runoff, adverse hydrologic alterations, undesirable removal of habitat or riparian buffer vegetation, and introduction of exotic plants and animals. Water quality standards are designed to protect designated uses of the waters of the state (*e.g.,* recreation, aquatic life, fish consumption), and exceedances of these standards are associated with interference of the designated use.

Methods

Surface water samples were collected to determine the health of the Chaires Crossroad stream and met the requirements of the Florida Department of Environmental Protection (FDEP).

Results

Nutrients

According to FDEP requirements, Numeric Nutrient Criteria (NNC) (expressed as an annual geometric mean) cannot be exceeded more than once in a three year period. Due to low water conditions, four temporally independent samples per year has only been achieved once (2009) during the period of record (2007-2013). Even though staff was not able to collect the required amount of samples in 2013, the geometric mean of the three samples that were collected showed that total phosphorus (0.06 mg/L) would have met the NNC while total nitrogen (1.12 mg/L) would not have met the criteria.

Dissolved Oxygen

As Figure 1 shows, the unnamed creek seldom met the Class III criteria for dissolved oxygen. This is the not surprising since low gradient, low flow streams often have low dissolved oxygen levels.

Metals

Lead levels exceeded Class III water quality criteria during the 2nd quarter. Relict anthropogenic sources

and acidic soils/waters are thought to be the cause of this exceedance.

Click here for more information on metal levels in Leon County waterbodies.

Other Parameters

Other water quality parameters appear to be normal for the area and no impairments were noted.

Conclusions

Nutrient results for 2013 suggest that phosphorus levels would be below the East Panhandle Region NNC, while nitrogen results would exceed the NNC. Dissolved oxygen levels seldom met the Class III criteria. This is the not surprising since low gradient, low flow streams often have low dissolved oxygen levels. Lead levels exceeded Class III water quality criteria during the 2nd quarter. Relict anthropogenic sources and acidic soils/waters are thought to be the cause of this exceedance.

Thank you for your interest in maintaining the quality of Leon County's water resources. Please feel free to contact us if you have any questions.

Contact and resources for more information

www.LeonCountyFL.gov/WaterResources

Click here to access the results for all water quality stations sampled in 2013.

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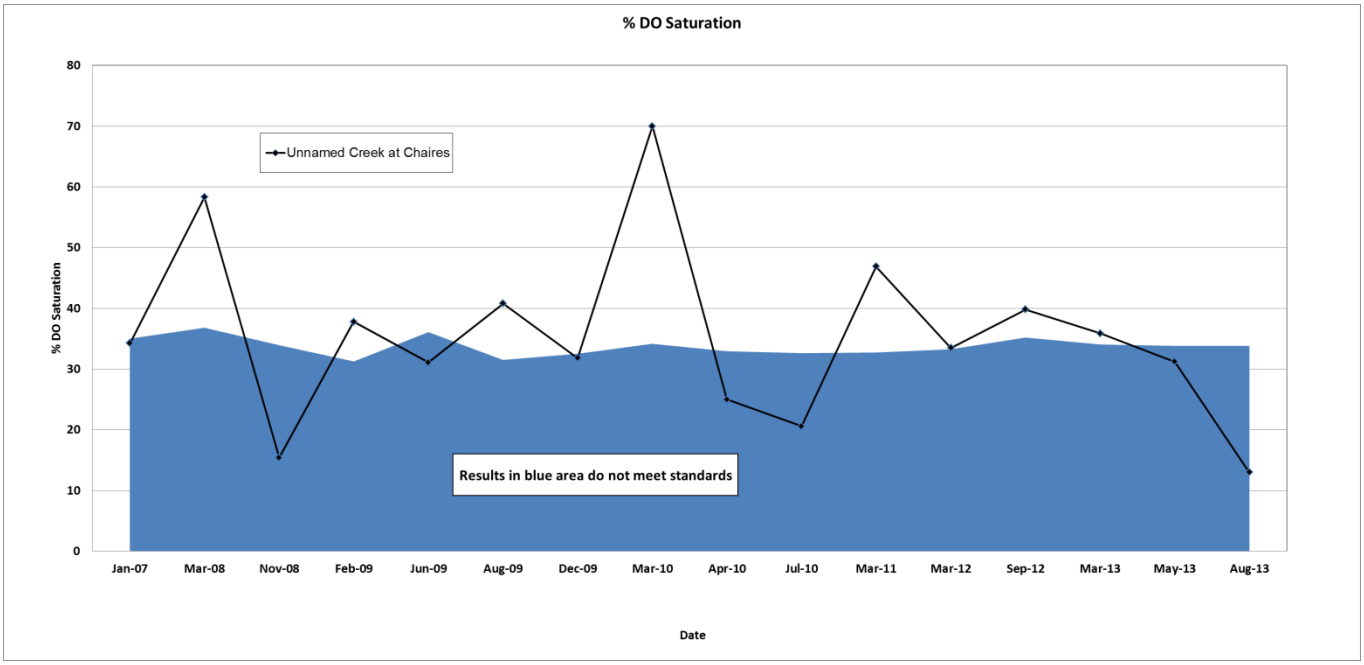

Figure 1. Dissolved Oxygen Percent Saturation results for Unnamed Stream at Chaires Crossroad.